Ecological problems

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# Greenhouse Effect

The greenhouse effect is the process by which radiation from a planet's atmospfere warmsthe planet's surface to a temperature above what it would be without its weathere.[1][2]If a planet's atmosphere contains radiatively active gases (i.e., greenhouse gases) they will radiate energy in all directions. Part of this radiation is directed towards the surface, warming it.[3] The intensity of the downward radiation – that is, the strength of the greenhouse effect – will depend on the atmosphere's temperature and on the amount of greenhouse gases that the atmosphere contains.Earth’s natural greenhouse effect is critical to supporting life. Human activities, mainly the burning of fossil fuels and clearing of forests, have strengthened the greenhouse effect and caused global warming.[4] The term "greenhouse effect" arose from a faulty analogy with the effect of sunlight passing through glass and warming a greenhouse. The way a greenhouse retains heat is fundamentally different, as a greenhouse works mostly by reducing airflow so that warm air is kept inside.[2][5][6]

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# Air Pollution

Air pollution occurs when harmful or excessive quantities of substances including gases, particulates, and biological molecules are introduced into Earth's atmosphere. It may cause diseases, allergies and also death of humans; it may also cause harm to other living organisms such as animals and food crops, and may damage the natural or built environment. Human activity and natural processes can both generate air pollution. Indoor air pollution and poor urban air quality are listed as two of the world's worst toxic pollution problems in the 2008 Blacksmith Institute World's Worst Polluted Places report.[1] According to the 2014 World Health Organization report, air pollution in 2012 caused the deaths of around 7 million people worldwide,[2] an estimate roughly echoed by one from the International Energy Agency.[3][4]

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# Water Pollution

Water pollution is the contamination of water bodies (e.g. lakes, rivers, oceans, aquifers and groundwater), usually as a result of human activities. Water pollution is one of many types of pollution which all lead to the introduction of contaminants into the natural environment that cause adverse change. In many cases, water pollution is caused by the discharge of wastewater to water bodies without adequate from of treatment. Water pollution can lead to environmental degradation of aquatic ecosystems. In turn, this can lead to public health problems, for example if people downstream use the same polluted river water for drinking or bathing. It may also impair other subsequent water uses, like irrigation activities. Water pollution affects the entire biosphere of plants and organisms living in these water bodies, as well as organisms and plants that might be exposed to the water. The effect can be damaging not only to individual species, but also to the natural biological communities. Water pollution can be grouped into surface water pollution (which includes marine pollution) and groundwater pollution. Nutrient pollution is a form of water pollution caused by nutrients and can affect surface water and groundwater. The sources of water pollution can be grouped in point sources and non-point sources (diffuse sources). Contaminants leading to water pollution include a wide spectrum of chemicals, pathogens, and physical changes such as elevated temperature.Measurement of water pollution is carried out by analysing water samples with physical, chemical and biological tests. Control of water pollution can be achieved by appropriate wastewater treatment (this includes sewage and industrial wastewater treatment), providing safely managed sanitation services for people who are currently without access, agricultural wastewater treatment, erosion and sediment control from construction sites, and control of urban runoff (storm water).

# Waste

Solid waste being shredded

Waste (or wastes) are unwanted or unusable materials. Waste is any substance which is discarded after primary use, or it is worthless, defective and of no use. Examples include municipal solid waste (household trash/refuse), hazardous waste, wastewater (such as sewage, which contains bodily wastes (feces and urine) and surface runoff), radioactive waste, and others. United Nations Environment Program. According to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal of 1989, Art. 2(1), "'Wastes' are substance or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law".[1] Schematic illustration of the EU Legal definition of waste[citation needed].United Nations Statistics Division.The UNSD Glossary of Environment Statistics[2] describes waste as "materials that are not prime products (that is, products produced for the market) for which the generator has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded."European Union .Under the Waste Framework Directive 2008/98/EC, Art. 3(1), the European Union defines waste as "an object the holder discards, intends to discard or is required to discard."[3] For a more structural description of the Waste Directive, see the European Commission's summary.

# Deforestation

Deforestation, clearance, or clearing is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use.[2] Examples of deforestation include conversion of forestland to farms, ranches, or urban use. The most concentrated deforestation occurs in tropical rainforests.[3] About 30 percent of Earth's land surface is covered by forests.[4] .Deforestation occurs for multiple reasons: trees are cut down to be used for building or sold as fuel (sometimes in the form of charcoal or timber), while cleared land is used as pasture for livestock and plantation. The removal of trees without sufficient reforestation has resulted in habitat damage, biodiversity loss, and aridity. It has adverse impacts on biosequestration of atmospheric carbon dioxide. Deforestation has also been used in war to deprive the enemy of vital resources and cover for its forces. Modern examples of this were the use of Agent Orange by the British military in Malaya during the Malayan Emergency and the United States military in Vietnam during the Vietnam War. As of 2005, net deforestation rates have ceased to increase in countries with a per capita GDP of at least US$4,600.[5][6] Deforested regions typically incur significant adverse soil erosion and frequently degrade into wasteland. Disregard of ascribed value, lax forest management, and deficient environmental laws are some of the factors that allow deforestation to occur on a large scale. In many countries, deforestation–both naturally occurring and human-induced–is an ongoing issue.[7] Deforestation causes extinction, changes to climatic conditions, desertification, and displacement of populations as observed by current conditions and in the past through the fossil record.[8] More than half of all plant and land animal species in the world live in tropical forests.[9].Between 2000 and 2012, 2.3 million square kilometres (890,000 sq mi) of forests around the world were cut down.[10] As a result of deforestation, only 6.2 million square kilometres (2.4 million square miles) remain of the original 16 million square kilometres (6 million square miles) of forest that formerly covered the Earth.[10] An area the size of a soccer football pitch is cleared from the Amazon rainforest every minute, with 136 million acres (55 million hectares) of rainforest cleared for animal agriculture overall.

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